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State of Utah  
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August 12, 2002

Tim Kirschbaum, Environmental Engineer  
Consolidation Coal Company  
P. O. Box 566  
Sesser, Illinois 62884

Re: 4th East Portal Excavation, Consolidation Coal Company, Emery Deep Mine, C/015/015-AM02B, Outgoing File

Dear Mr. Kirschbaum:

The above-referenced amendment has been reviewed. There are deficiencies that must be adequately addressed prior to approval. A copy of our Technical Analysis is enclosed for your information. In order for us to continue to process your application, please respond to these deficiencies by September 13, 2002.

If you have any questions, please call me at (801) 538-5325 or Wayne Western at (801) 538-5263.

Sincerely,

A handwritten signature in black ink that reads "Daron R. Haddock".

Daron R. Haddock  
Permit Supervisor

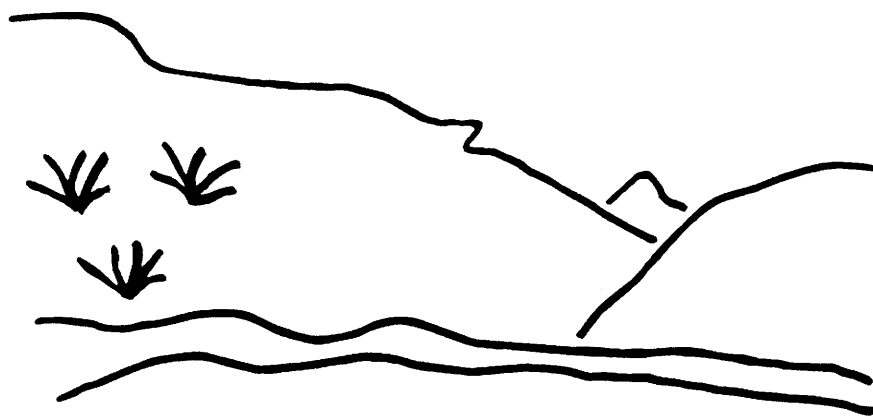
an

Enclosure

cc: Price Field Office

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# State of Utah



## Utah Oil Gas and Mining

### Coal Regulatory Program

Emery Deep Mine  
4<sup>th</sup> East Portal Excavation  
C/015/015-AM02B  
Technical Analysis  
August 1, 2002

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INTRODUCTION

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## TECHNICAL ANALYSIS

### INTRODUCTION

The Division approved the construction of 3-portal at the 4th East Portal area. The plan was originally based on the portals being used for intake air and emergency escape way. The entries would be constructed at the bottom of an open cut. The 4th East Portal entry was envisioned as a ramp down to the top of the I & J seams (70 feet below the surface) with three portal entries, a 73,000 cu yd excavated material pile, topsoil pile and an undisturbed diversion ditch.

With this submittal, the Permittee has modified plans for portal development and surface facilities layout to include an air shaft, a 2,600 ton surge pile, crusher, coal handling facilities, 10,000 ton processed coal stockpile, a 100 ton rock dust bin, water tank, storage yard, two retention ponds and a sediment pond. The proposed excavated material pile has doubled in size, and is now projected to be 132,000 cubic yards.

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C/015/015-AM02B  
August 2, 2002

## INTRODUCTION

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SUMMARY OF DEFICIENCIES

## SUMMARY OF DEFICIENCIES

*The Technical Analysis of the proposed permit changes cannot be completed at this time. Additional information is requested of the permittee to address deficiencies in the proposal. A summary of deficiencies is provided below. Additional comments and concerns may also be found within the analysis and findings made in this Draft Technical Analysis. Upon finalization of this review, any deficiencies will be evaluated for compliance with the regulatory requirements. Such deficiencies may be conditioned to the requirements of the permit issued by the Division, result in denial of the proposed permit changes, or may result in other executive or enforcement action as deemed necessary by the Division at that time to achieve compliance with the Utah Coal Regulatory Program.*

*Accordingly, the permittee must address those deficiencies as found within this Draft Technical Analysis and provide the following, prior to approval, in accordance with the requirements of:*

### Regulations

- R645-301- 725.100,** The Permittee will have to contact the Utah Division of Water Rights to determine if any water rights need to be filed on the water that will be diverted into the mine. .... 18
- R645-301-121.100,** 1) The submittal must indicate that the topsoil is stored underneath the excavated material stockpile, not within the excavation stockpile as stated on page 15, Chapter III. 2) Two pages of 17a and 17b were submitted with different dates and figures on the pages. Please remove from the final submittal the excess pages. 3) Page IV-7 of the submittal must be updated with field modifications for in-place protection of topsoil that occurred on site during placement of the topsoil and excavated material. 4) The submittal must include an explanation on page IV-7 for deviating from the normal topsoil handling practice..... 26
- R645-301-121.200,** 1) The application should indicate on page III-15, that there will be three entries at the 4<sup>th</sup> East Portal rather than one proposed portal at the Emery Mine. 2) The application refers to near future disturbance at the 4 E. Portal on page IV-16. This reference as well as Table III-2 must be corrected to delineate actual disturbance..... 9
- R645-301-121.200,** The Permittee must state why the boxcut area in the 4<sup>th</sup> East Portal facilities will not be reclaimed to the pre-disturbed area and what the postmining topography will be like..... 42
- R645-301-132,** The Permittee must include with the submittal a statement of the qualifications and ARCPACS certification of the Mr. Jim Nyenhuis, the certified soil scientist who conducted the recent soil survey. .... 9



**SUMMARY OF DEFICIENCIES**

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| <b>R645-301-142</b> , The Permittee is required to update the PHC to identify changes in probable hydrologic consequences as a result of inactivity and any potential impacts from future mining. ....   | 33 |
| <b>R645-301-142</b> , The Permittee will submit a reclamation schedule identifying the timing of removing and reclaiming of the drainages, berms, culverts, retention ponds, sedimentation pond and silt fences in relation to mining structure removal, regrading and reseeding. ....   | 48 |
| <b>R645-301-222</b> , The Permittee must include in Appendix VII-3 the field notes, discussion, conclusions and soils map resulting from Jim Nyenhuis' site visit on May 31, 2002.....   | 14 |
| <b>R645-301-231.400</b> , 1) The submittal must indicate which seed mix was used on the topsoil pile and which mix was used on the berms surrounding the pile. The submittal must also describe the length of time that passed between stockpiling and seeding and between seeding and any applications of water. The submittal should define the irrigation of the topsoil pile and berms (frequency and amount of water applied). 2) The submittal should be updated with a drawing of the topsoil pile, indicating volumes surveyed in the pile (as per the MRP, page IV-8). .... | 26 |
| <b>R645-301-240, -234.220</b> , The plan must explain the purpose and describe what analyses will be conducted on the in-place stored topsoil and what equipment will be used to loosen the compacted in place topsoil.....  | 46 |
| <b>R645-301-242.110</b> , The plan should calculate the replacement of topsoil to those areas where topsoil was removed, not the entire site.....  | 46 |
| <b>R645-301-244</b> , The plan should describe wind erosion control during plant establishment and provide a method using the use of the best technology available to re-establish cryptogams to the soil surface. ....  | 51 |
| <b>R645-301-244.100</b> , The submittal should indicate measures to be taken to establish wind erosion control on the excavated material pile. ....  | 24 |
| <b>R645-301-322</b> , A baseline surveys for macroinvertebrates and fish must be conducted in Quitchupah Creek and/or Christiansen Wash above and below the facilities area. The data, results and conclusions must be included in the MRP.....  | 12 |
| <b>R645-301-331</b> , The application must describe a method to revegetate interim disturbances. ....  | 26 |
| <b>R645-301-340</b> , The application must describe methods to re-establish the predisturbance plant community and restore the site to its premining land use.....   | 50 |
| <b>R645-301-420</b> , The revised Division of Air Quality Approval Order and "Permit to Construct" must be included with the application. ....   | 24 |
| <b>R645-301-521.100</b> , The Permittee will have to make changes on the maps to conform to changes  |    |

SUMMARY OF DEFICIENCIES

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|---|----|
| described in the Hydrologic Resource Section. The Permittee should also identify hydrologic structures such as berms, culverts and silt fences to ensure concise identification. ....   | 19 |
| <b>R645-301-521.150 and R645-301-121.200</b> , The Permittee will clearly label Plate III-5 as showing both the premining and postmining topography for the 4 <sup>th</sup> East Portal areas. The Permittee will also reference that information in the MRP text. ....   | 20 |
| <b>R645-301-521.160</b> , The Permittee must give the Division a map that shows all of the surface facilities for the 4 <sup>th</sup> East Portal area. This map is needed so that the Division's inspector can check surface facilities against one map. The Permittee can contact the inspector for additional information about the surface facilities map.....  | 37 |
| <b>R645-301-526.110</b> , The Permittee must state in the MRP text what existing structures if any exist at the 4 <sup>th</sup> East Portal disturbed area. ....  | 22 |
| <b>R645-301-526.116</b> , The Permittee must state what steps will be taken to protect the public from mining and reclamation activities that will be conducted within 100 feet of the County Road in and around the 4 <sup>th</sup> East Portal disturbed area.....  | 23 |
| <b>R645-301-527</b> , The Permittee must classify each road that will be constructed within the 4 <sup>th</sup> East Portal disturbed area, and include a detailed description of each road that contains the road gradient, road surface, road cut and fill embankments, culverts and ditches. ....  | 27 |
| <b>R645-301-528</b> , The Permittee must list all support facilities and utility installations in one section of the MRP. That list must show all structures that will be constructed in the 4 <sup>th</sup> East Portal disturbed area. ....   | 35 |
| <b>R645-301-528.320</b> , The Permittee must state how they will handle coal mine waste at the 4 <sup>th</sup> East Portal area. For example, the Permittee must state if coal mine waste will be temporarily stored before taken to a disposal site. ....  | 29 |
| <b>R645-301-536</b> , 1) The Permit Application must provide an estimate of the amount of coal mine waste to be generated by mining at the 4 <sup>th</sup> East Portal. 2) The submittal must state that the excavated material storage pile will not be the repository for underground development waste as defined by R645-100. 3) The submittal must state how the refuse generated by the 4 <sup>th</sup> East Portal development and by operations will be handled (see similar deficiency under R645-301-528.320). .... | 30 |
| <b>R645-301-542.200</b> , The Permittee must give the Division a detailed cut and fill chart for the reclamation of the 4 <sup>th</sup> East Portal area. The Division is concerned that there may be excess material from excavated material stockpile due to swelling.....  | 44 |
| <b>R645-301-542.600</b> , The Permittee must state how roads in the 4 <sup>th</sup> East Portal area will be reclaimed.....   | 46 |

SUMMARY OF DEFICIENCIES

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- R645-301-551**, The Permittee must commit to both constructing MSHA approved seals and backfilling a minimum of 25 feet for all portals. In addition, the Permittee must state how the backfill material in the shaft is to be placed to prevent movement that would result in settlement of the reclaimed surface..... 45
- R645-301-553**, The method of compaction of the excavated material into the box cut must be described. Compaction by free fall is not acceptable. .... 44
- R645-301-553.130**, The Permittee must show that the reclaimed slopes will have a static safety factor of 1.3 or greater. .... 44
- R645-301-724**, The Permittee must update Chapter X, Part B with current climatological information from the town of Emery weather station..... 12
- R645-301-725.100**, The Permittee must obtain UPDES permits for the retention basins. .... 18
- R645-301-731**, The Permittee must construct sediment controls to treat or contain the runoff that does not flow to the sedimentation pond, ramp area or retention basins. The Permittee shall make changes to maps to reflect hydrologic structure modifications..... 18
- R645-301-731**, The Permittee shall provide silt fence installation drawings and identify the location and placement of silt fences on a map. Silt fence is required around the boundary of the west and north sides of the 4<sup>th</sup> East portal area..... 33
- R645-301-731.221**, The Permittee must provide a monitoring plan for the retention ponds. The plans must show that the retention pond will have decant pipes and be monitored according to the UPDES permit..... 33
- R645-301-731.510**, The Permittee shall identify the amount of surface runoff draining into the mine from the surface and any potential for contamination or impacts to underground water. 33
- R645-301-762.100**, The Permittee will submit detailed reclamation plans to identify backfilling and compaction of the ramp/ROM stockpile area, and designs to show how the stream channel will be rebuilt to ensure a stable channel with low leakage potential to prevent infiltration of runoff into the fill material of the ramp/ROM fill. .... 48
- R645-301-830**, The Permittee must provide the Division with a detailed reclamation bond cost estimates in the form outlined in the *OSM Reclamation Handbook* for the entire Emery Deep mine. The bond calculations for the Emery Deep mine are not in a form that the Division can use to determine the adequacy of bonding. The Division will supply a copy of the handbook and other technical support as needed by the Permittee. .... 52

## GENERAL CONTENTS

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# GENERAL CONTENTS

## IDENTIFICATION OF INTERESTS

Regulatory Reference: 30 CFR 773.22, 778.13; R645-301-112.33

### Analysis:

The permittee has submitted an updated copy of officers and directors of Consolidation Coal Company. This information can be seen in appendix I-1.

The permittee has submitted in appendix I-3 a list of SMCRA permits which Consolidation Coal has throughout the United States.

### Findings:

The permittee has met the minimum requirements of this section.

## VIOLATION INFORMATION

Regulatory Reference: 30 CFR 773.15(b), 773.23, 778.14; R645-300-132, -301-113.

### Analysis:

No information was given and is not a requirement for this amendment.

### Findings:

The permittee has met the minimum requirements of this section.

## RIGHT OF ENTRY

Regulatory Reference: 30 CFR 778.15; R645-301-114.

### Analysis:

The Consolidation Coal Company owns the surface property to the 4<sup>th</sup> East Portals. The Ownership and Leasehold Interest Map (Plate I-1) comparing this information with Plate III-1 of the amendment verifies surface ownership.

The underground coal rights at the 4<sup>th</sup> East Portal breakout on Plate IV-1 in the MRP shows no Federal Coal Lease. Consolidation Coal Company owns the coal rights as shown on plate I-1 in the MRP.

**Findings:**

The permittee has met the minimum requirements of this section.

**LEGAL DESCRIPTION AND STATUS OF UNSUITABILITY CLAIMS**

Regulatory Reference: 30 CFR 778.16, 779.12(a), 779.24(a)(b)(c); R645-300-121.120, -301-112.800, -300-141, -301-115.

**Analysis:**

The location of the 4<sup>th</sup> East Portal will not change from the original approved amendment. Comparing Plate III-5 in the Mining and Reclamation Plan and Plate III-1 in this submittal verifies the same location. Therefore, there will be no change in permit and disturbed area.

The disturbed area is located beginning at a point which is 5.0 feet West of the Center of Section 27, Township 22 South, Range 6 East, SML; thence North, 850.0 feet; thence West, 820.0 feet; thence South, 1195.0 feet; thence East, 820.0 feet; thence North, 345.0 to the point of beginning. The permit area is 5,180 acres for Emery Deep Mine, of this only 247 acres are disturbed. This is reflected in the MRP.

**Findings:**

No public notice was given nor was it required for this amendment.

**FILING FEE**

Regulatory Reference: 30 CFR 777.17; R645-301-118.

**Analysis:**

This is not required for this amendment.

**Findings:**

The permittee has met the minimum requirements of this section.

**PERMIT APPLICATION FORMAT AND CONTENTS**

Regulatory Reference: 30 CFR 777.11; R645-301-120.

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## GENERAL CONTENTS

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### Analysis:

The application indicates on page 15, Chapter III that there will be one proposed portal at the Emery Mine. This is probably a reference to the 4<sup>th</sup> East portal that is actually three entries. The narrative should indicate three portal entries.

The application refers to near future disturbance at the 4<sup>th</sup> E. Portal on page IV-16. This reference as well as Table III-2 must be corrected to delineate actual disturbance.

### Findings:

The information provided does not meet the minimum requirements for Permit Application Format and Contents. The Permittee must submit the following, prior to approval, in accordance with:

**R645-301-121.200**, 1) The application should indicate on page III-15, that there will be three entries at the 4<sup>th</sup> East Portal rather than one proposed portal at the Emery Mine. 2) The application refers to near future disturbance at the 4 E. Portal on page IV-16. This reference as well as Table III-2 must be corrected to delineate actual disturbance.

## REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

### Analysis:

The qualifications and ARCPACS certification of the soil scientist conducting the on-site soil thickness survey should be disclosed in the MRP.

### Findings:

The information provided does not meet the minimum requirements for Reporting of Technical Data. The Permittee must submit the following, prior to approval, in accordance with:

**R645-301-132**, The Permittee must include with the submittal a statement of the qualifications and ARCPACS certification of the Mr. Jim Nyenhuis, the certified soil scientist who conducted the recent soil survey.

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August 2, 2002

## GENERAL CONTENTS

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ENVIRONMENTAL RESOURCE INFORMATION

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## ENVIRONMENTAL RESOURCE INFORMATION

### PERMIT AREA

Regulatory Requirements: 30 CFR 783.12; R645-301-521.

#### Analysis:

No additions or subtractions to the permit area will be made as part of the construction of the 4<sup>th</sup> East Portal facility. Plate VI-12 shows the location of the disturbed area and permit boundaries for the 4<sup>th</sup> East Portal facility. Plate I-1 shows the entire permit boundary.

#### Findings:

The Permittee has met the minimum regulatory requirements for the permit area section of the TA.

### CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

#### Analysis:

Climatological resource information is addressed in the MRP. The average annual precipitation at the site is about 8 inches per year. The Permittee has calculated the 10 yr-24 hr precipitation event to be 1.7 inches.

Climatological information is provided in Chapter X Part B of the MRP. Precipitation records have been kept at the Emery weather station since 1901. The MRP summarizes the data from 1901 to 1978 as follows:

- 7.55 inches of precipitation annually
- 2.97 inches during "winter," October through March
- 4.58 inches during "summer," April through September.
- 75% of the precipitation enters the soil
- 66% of the soil moisture is lost due to evapotranspiration.

The wettest months of the year are August and September.

#### Findings:

The information provided does not meet the minimum requirements for Reporting of Technical Data. The Permittee must submit the following, prior to approval, in accordance with:



**R645-301-724**, The Permittee must update Chapter X, Part B with current climatological information from the town of Emery weather station.

## **FISH AND WILDLIFE RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 784.21; R645-301-322.

### **Analysis:**

Biological baseline data for Quitchupah Creek must be collected. The 4<sup>th</sup> East Portal area drains into an ephemeral wash and then into Christiansen Wash. Macroinvertebrate studies should be done in Quitchupah Creek, immediately below the confluence with Christiansen Wash. A qualified person should conduct baseline surveys in the spring and fall, on standardized dates. The surveys should be done every year for two years and then every third year after that. Results of baseline studies done in the early 1980's should be compared to current survey results.

A fish survey should be done in Quitchupah Creek at the facilities area. Louis Berg, DWR, should be contacted concerning the survey. Ivie Creek contains flannelmouth suckers, bluehead suckers, leatherside chubs, speckled dace, and fathead minnows. The first three of these species are on Utah's sensitive species list. Quitchupah Creek is a tributary to Ivie Creek.

### **Findings:**

Information provided in the application and MRP is not considered adequate to meet the minimum Fish and Wildlife Resource Information requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-322**, A baseline surveys for macroinvertebrates and fish must be conducted in Quitchupah Creek and/or Christiansen Wash above and below the facilities area. The data, results and conclusions must be included in the MRP.

## **SOILS RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.21, 817.22, 817.200(c), 823; R645-301-220, -301-411.

### **Analysis:**

James P. Walsh & Associates, Inc. of Boulder Colorado conducted a soil survey of the 22.5 acre proposed 4<sup>th</sup> East Portal site in March 1981 by (MRP Section VII.A.1). The soils map is Plate VII-1. Soils mapped by the survey were the Castle Valley extremely stony very fine sandy loam, Persayo-Chipeta Complex, Killpack silty clay loam, Ferron silt loam and Rock Land.

**ENVIRONMENTAL RESOURCE INFORMATION**

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James P. Walsh & Associates, Inc. of Boulder Colorado conducted a soil survey of the 22.5 acre proposed 4<sup>th</sup> East Portal site in March 1981 by (MRP Section VII.A.1). The soils map is Plate VII-1. Soils mapped by the survey were the Castle Valley extremely stony very fine sandy loam, Persayo-Chipeta Complex, Killpack silty clay loam, Ferron silt loam and Rock Land.

The submittal refers to Appendix VII-3, received May 17, 2002 in response to Division Order dated May 4, 2002. Appendix VII-3 is a May 2002 report prepared by Mt. Nebo Scientific, Inc, entitled, "Soil Resources Report at the 4<sup>th</sup> East Portal Area." This report summarizes the information in the plan for the 4<sup>th</sup> East portal and suggests that the rock land and Persayo-Chipeta complex dominate acreage proposed for disturbance. The report states that within the 22 acre disturbed area, 15 acres are proposed for disturbance, and approximately 13,000 cubic yards of topsoil could be salvaged.

The report was followed by a site visit on May 31, 2002 by a Jim Nyenhuis (ARCPACS certification #2753), a certified soil scientist. Mr. Nyenhuis contacted the Division following the site visit with the following information, 38 backhoe pits were dug on the proposed 15 acres of disturbance. As a result, the area mapped as rock outcrop (RY) was reduced and the area covered by Castle Valley soils was enlarged and two inclusions were outlined: Montwel and Begay soils. Castle Valley series has been renamed Hideout by the Natural Resources Conservation Service (NRCS). Contrary to the suggestion in the 1981 soil survey, there was no evidence of excessive sodium. Mr. Nyenhuis made the recommendation that all soil could be salvaged down to the sandstone in sequence from the northwest to the southeast of the proposed disturbed area.

The following soil series were mapped by Mr. Nyenhuis:

- Hideout Soil Series = Loamy, mixed, superactive, calcareous, mesic Lithic Ustic Torriorthents;
- Montwel Soil Series = Fine-loamy, mixed, superactive, calcareous, mesic Typic Torriorthents;
- Begay Soil Series = Coarse-loamy, mixed, superactive, mesic Ustic Haplocambids;
- Persayo Soil Series = Loamy, mixed, calcareous, mesic, shallow Typic Torriorthents;
- Chipeta Soil Series = Clayey, mixed, active, calcareous, mesic, shallow Typic Torriorthents.

A summary of Mr. Nyenhuis' May 31, 2002 site visit and recommendations must be submitted to complete the 4<sup>th</sup> East Portal Soil Survey.

**Findings:**

The information provided does not meet the minimum requirements for Environmental Resource Soils. The Permittee must submit the following, prior to approval, in accordance with:

**R645-301-222**, The Permittee must include in Appendix VII-3 the field notes, discussion, conclusions and soils map resulting from Jim Nyenhuis' site visit on May 31, 2002.

## ALLUVIAL VALLEY FLOORS

Regulatory Reference: 30 CFR 785.19, 822; R645-302-320.

### Analysis:

#### Alluvial Valley Floor Determination

An ephemeral channel with a drainage area of 310.4 acres drains across the site. Most of the channel is cut in bedrock and alluvial soils are very thin. There is no subirrigation in the stream channel that crosses the portal site. The site is very dry. There are no alluvial valley floors on the proposed portal site.

Alluvial Valley Floor information is discussed in Chapter XI of the MRP and illustrated on Plate 2 Alluvial Deposits and Soils Map of Appendix XI-1 and on Plate XI Potential Alluvial Valley Floor Along Upper Quitcupah Creek.

The following quote comes from the February 25, 1985 TA for the Emery Deep Mine:

*In determining the potential for Alluvial Valley floors (AVF's) on and adjacent to Consolidation Coal Company's Emery Deep Mine, the regulatory authority evaluated areas along Quitcupah Creek and Christiansen Wash in sections 19 – 22, 28 – 30, 32 and 33 of T22S, R6E Salt Lake Meridian.*

*Section 510(b)(5) of the Surface Mining Control and Reclamation Act (SMCRA) provides specific protection for AVF's. A proviso in Section 510(b)(5) of SMCRA exempts from the requirements of Section 510(b)(5) those surface coal mining operations which in a year preceeding the enactment of the Act (August 3, 1977) produced coal in commercial quantities and were located within or adjacent to AVF's or had specific permit approval from the State regulatory authority to conduct surface coal mining operations on AVF's.*

*Consol meets the requirements provided in this proviso for land sections 28, 29, 32, and 33 since a state permit was in affect and they were mining commercial quantities of coal prior to August 3, 1976.*

*Consol will be required to provide mitigating measures to areas within the exempted area where subsidence from mining operation occurs.....*

ENVIRONMENTAL RESOURCE INFORMATION

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*The regulatory authority determined that AVF's do not exist along Christiansen Wash. Information provided by the applicant points out that the flow in Christiansen Wash is produced mainly by flood irrigation return from fields that are initially supplied by Muddy Creek, a stream in an adjacent drainage basin.....*

*The regulatory authority has determined that AVF's exist in sections 19 and 30 of the 5 year permit area which must be protected according to the established regulations governing AVF's. The applicant has committed to protecting that area known as Jack Lewis field shown as area III in Figure 1 (March 2, 1984 submittal) and has supplied the necessary information for its protection as an AVF. The regulatory authority has determined that the hatched area outlined in the accompanying map must be protected as AVF. Historically irrigation water has been diverted from Quitchupah Creek and there exists the potential that area II as well as other areas outlined in the accompanying map could be flood irrigated and subirrigated with waters from Quitchupah Creek. Since no mining will occur in Area II, no adverse impacts should effect the delineated alluvial valley floor.*

Area III and area II referred to in the above quotation, are outlined on Plate XI-1 of the MRP. Area I is actively flood irrigated and lies in the "grandfathered" zone, above existing workings in Section 29. Area II falls in Section 30. Area III is active flood irrigated Quitchupah Creek water in sections 19 and 30.

The 4<sup>th</sup> East Portals lie in the NE1/4 of Section 27, T. 22 S. R. 6 E. Salt Lake Meridian, on land that drains to Christiansen Wash.

**Findings:**

The Division determined in 1985 that an AVF exists in Sections 19 and 30 T. 22 S. R. 6 E. Salt Lake Meridian. There is not an AVF in the NE1/4 of Section 27, T. 22 S. R. 6 E. Salt Lake Meridian, where the 4<sup>th</sup> East Portals will be developed.

**PRIME FARMLAND**

Regulatory Reference: 30 CFR 785.16, 823; R645-301-221, -302-270.

**Analysis:**

Plate 7-8 included with the 1988 Annual Report indicates areas of flood irrigated and specially managed agricultural land in Sections 8 - 11, 13 - 17, 19 - 23, and 28 - 32 of T. 22 S. R. 6 E. Salt Lake Meridian. Diversion structures shown on this map are on the western boundary of the permit area. Plate XI-1 indicates three areas of active flood irrigation within the southwest portion of the permit area. Plate VIII-1 confirms the prevalence of pastureland and hayland within the permit area.

## ENVIRONMENTAL RESOURCE INFORMATION

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The 1985 TA for the Emery Mine states:

The areas of prime farmland within the Detailed Mapping Area are shown on Plate 8-3.... The potential exists that prime farmland may be impacted by subsidence in the future (see subsidence section in this TA). Prime farmland that may be impacted is located in T. 22 S., R. 6 E.; Secs 20, 22, 29, 30 and 31. These areas were identified by matching areas of prime farmland to areas of present or future underground mining.

Plate IV-1 shows the mine progression underneath the irrigated pasture lands. The Permittee commits to notifying landowners six months prior to mining beneath their property (Chap V page 39). The notification will include information on measures to prevent, minimize or control subsidence. Mitigation is discussed in Chapter V page 41.

Appendix VII-3 (submitted May 17, 2002 in response to Division Order 02A), indicates that there are no prime farmlands or important farmlands at the site of the 4<sup>th</sup> East Portal Area development, Section 27, T. 22 S. R. 6 E. Salt Lake Meridian.

### Findings:

The Division finds that there are prime farmlands within the permit area, but not within the area of 4<sup>th</sup> East Portal development, NE1/4 of Section 27, T. 22 S. R. 6 E. Salt Lake Meridian.

## GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

### Analysis:

Geology is described in the MRP. The 4<sup>th</sup> East Portal area is developed in the Ferron Sandstone Member of the Mancos Shale. The surface is between 50 to 70 feet above the coal bed.

### Findings:

The Permittee has submitted the minimum requirements of the Geologic section.

## HYDROLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 701.5, 784.14; R645-100-200, -301-724.

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**ENVIRONMENTAL RESOURCE INFORMATION**

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**Analysis:**

**Sampling and Analysis**

Consul has conducted sampling over the Emery Deep minesite, at planned sampling stations for the past 20 years. The channels on or adjacent to the 4<sup>th</sup> East Portal site are ephemeral. No samples sites are located on the site. Retention basins are planned for the Topsoil Stockpile and the Excavated Material Stockpile. The ponds are designed to contain the 10 yr-24 hr precipitation event. There is no mention of making the ponds a UPDES sites.

**Baseline Information**

Baseline information is presented in the MRP. No hydrologic baseline information has been collected on the 4<sup>th</sup> East Portal area, because the site is ephemeral. The 100 yr- 6 hr precipitation events were calculated for the ephemeral channel crossing the portal site.

**Ground-Water Information**

Ground-water is pumped from the mine into treatment ponds. No groundwater will be discharged from the 4<sup>th</sup> East Portal site.

**Surface-Water Information**

There were no surface water sources on the 4<sup>th</sup> East Portal site prior to development. Runoff calculations have been completed to establish possible flow over the site. Hydrologic structures have been designed to divert, control and contain all runoff from design storms.

**Modeling**

No modeling has been conducted for the 4<sup>th</sup> East Portal site.

**Alternative Water Source Information**

With the development of the ramp and ROM stockpile precipitation that will be intercepted and diverted into the mine. An average (based on average annual precipitation) of 1.33 ac-ft per year will be diverted into the mine. The Permittee needs to check with the Utah Division of Water Rights to see if a water right has to be filed for this water.

**Probable Hydrologic Consequences Determination**

There is no specific PHC described for the 4<sup>th</sup> East Portal submittal, although the Permittee has described several methods to mitigate hydrologic impacts. The Permittee will be required to submit an upgraded version of the PHC for the Emery Deep Mine including a description of the probable hydrologic consequences of the 4<sup>th</sup> East Portal.

**ENVIRONMENTAL RESOURCE INFORMATION**

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**Findings:**

Information provided in the application is not considered adequate to meet the minimum Hydrologic Resource Information section requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-728,** The Permittee will submit an upgraded PHC determination for the 4th East Portal.

**R645-301-731,** The Permittee must construct sediment controls to treat or contain the runoff that does not flow to the sedimentation pond, ramp area or retention basins. The Permittee shall make changes to maps to reflect hydrologic structure modifications.

**R645-301- 725.100,** The Permittee will have to contact the Utah Division of Water Rights to determine if any water rights need to be filed on the water that will be diverted into the mine.

**R645-301-725.100,** The Permittee must obtain UPDES permits for the retention basins.

**MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION**

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

**Analysis:**

**Affected Area Boundary Maps**

The affected area boundary for the 4<sup>th</sup> East Portal is shown on several plates, including Plate III-1, IV-10a and VI-12.

**Coal Resource and Geologic Information Maps**

The plans for the 4<sup>th</sup> East Portal describe the facilities area to gain access to the coal seam. The coal seam is 50 to 70 feet below the facilities. The plans show a ramp to gain access to the coal seam. No coal resource maps are supplies since the plans are for a facilities site.

**Existing Structures and Facilities Maps**

The only existing structure that is shown in the 4<sup>th</sup> East Portal area is the County road,

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**ENVIRONMENTAL RESOURCE INFORMATION**

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Cowboy Mine Road No. 915.

**Existing Surface Configuration Maps**

The pre-existing topography is located on Plate III-5. The plate is labeled 4<sup>th</sup> East Portal Site Postmining Topography Plan View. The pre-existing topography is shown overlapping the proposed postmining topography. Since the plate is not labeled as having pre-existing topography, the reader would not know where to find that information. To avoid confusion the Permittee must label Plate III-5 as pre and postmining topography. That information must also be identified in the text.

**Mine Workings Maps**

The 4<sup>th</sup> East Portal plans are surface facilities only.

**Monitoring Sampling Location Maps**

There are no monitoring or sampling locations on the 4<sup>th</sup> East Portal area.

**Permit Area Boundary Maps**

The permit boundary will not change with the construction of the 4<sup>th</sup> East Portal area. Plate VI-12 shows the location of the 4<sup>th</sup> East Portal disturbed area boundary and the permit boundary.

**Surface and Subsurface Ownership Maps**

Surface and Subsurface ownership is shown on Plate I-1 in the MRP.

**Contour Maps**

Contours are shown on several maps, including Plates III-1, IV-10a and VI-12.

**Findings:**

Information provided in the application is not considered adequate to meet the minimum Maps, Plans and Cross-Sections of Resource Information section requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-521.100**, The Permittee will have to make changes on the maps to conform to changes described in the Hydrologic Resource Section. The Permittee should also identify hydrologic structures such as berms, culverts and silt fences to ensure concise identification.



**ENVIRONMENTAL RESOURCE INFORMATION**

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**R645-301-521.150 and R645-301-121.200**, The Permittee will clearly label Plate III-5 as showing both the premining and postmining topography for the 4<sup>th</sup> East Portal areas. The Permittee will also reference that information in the MRP text.

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## OPERATION PLAN

### MINING OPERATIONS AND FACILITIES

Regulatory Reference: 30 CFR 784.2, 784.11; R645-301-231, -301-526, -301-528.

#### Analysis:

##### Type and Method of Mining Operations

The mining operations at the Emery Mine will be room-and-pillar mining methods. Plate IV-1 shows the layout, existing workings and proposed workings. The Permittee proposes to access the coal resources through the 4<sup>th</sup> East Portals.

The portal excavation is designed to access three 8 foot by 14 foot entries located at the southeast end of the 4 East mining section. The purpose of these entries is to provide intake air and access the north and east sections of the mine. The excavation is designed around a 0.5H: 1V slide slopes with a 5-foot safety berm, at approximately the halfway point, and a 60-foot bottom width. The ramp will have a grade of 10% to reach the entry level of the portals.

Before rock excavation, all topsoil will be removed and stockpiled for use in final reclamation. The topsoil stockpile will have a berm place around it. Seeding will stabilize the surface of the topsoil stockpile. The topsoil pile will be surveyed to determine the yardage and the average topsoil replacement depth. The Permittee does not anticipate a topsoil deficiency. However, if one exists following the survey of the stockpile, the Division will be notified and a plan will be developed.

Portal excavation will remove approximately 99,000 bank cubic yards of rock. The surrounding stockpile is designed to contain 128,000 loose cubic yards, at an approximate height of 20 feet. The excavation work will be performed by a licensed contractor who will be required by contract to comply with all applicable state and federal laws in the use of explosives. Coal removed from the bottom area will be hauled to the existing tippie area. An area at the top of the ramp will be graded to accommodate vehicle parking, storage of supplies, water tank and a rock dust storage bin. Entry to the mine will be restricted by a chain link fence and locked gates.

An airshaft is proposed to be located in the southwest portion of the 4<sup>th</sup> East Portal area. The 16-foot outside diameter shaft will be equipped with an exhaust fan. The airshaft is required to supply ventilation to the north and east sides of the mine. The shaft will be 70 feet deep. Construction of the airshaft will result in approximately 520 cubic yards of material that will need to be stored in the material stockpile.

The cut material from the portal ramp and airshaft will be place in the excavation material stockpile. The material will be used to backfill the ramp and shaft during reclamation.

### **Facilities and Structures**

The proposed facilities and structures that will be associated with the 4<sup>th</sup> East Portal area include:

- A three-entry portal system that will be located at the bottom of an open cut located at the eastern edge of the permit area, along with a ramp. The portals will be used to allow access of rubber-tired vehicles and to serve as a coal haulage portal.
- Topsoil stockpile
- Excavation Material Stockpile
- Sediment Pond #9
- Coal Handling Facilities and Stockpiles
- Stream Diversion – Unaffected Drainage
- Storage Area
- Airshaft
- Rock Dust Bin
- Cowboy Mine Road No. 915.

### **Findings:**

The Permittee has submitted the minimum requirements of the Mining Operations and Facilities section.

### **EXISTING STRUCTURES:**

Regulatory Reference: 30 CFR 784.12; R645-301-526.

### **Analysis:**

An existing structure means a structure or facility used in connection with or to facilitate coal mining and reclamation operations for which construction began before January 21, 1981. The Permittee does not state if any existing structures exist at the site that will be used, modified or reconstructed for use in connection with coal mining and reclamation. To avoid confusion the Permittee must state if such facilities exist.

### **Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-526.110**, The Permittee must state in the MRP text what existing structures if any exist at the 4<sup>th</sup> East Portal disturbed area.

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### RELOCATION OR USE OF PUBLIC ROADS

Regulatory Reference: 30 CFR 784.18; R645-301-521, -301-526.

#### Analysis:

The Permittee must describe the measures that will be used to ensure that the interests of the public are protected from mining activities that are proposed to occur within 100 feet of the right-of-way line County road No. 915. The activities that will occur within 100 feet of the County road include installation of a culvert and construction of a berm.

#### Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-526.116**, The Permittee must state what steps will be taken to protect the public from mining and reclamation activities that will be conducted within 100 feet of the County Road in and around the 4<sup>th</sup> East Portal disturbed area.

### AIR POLLUTION CONTROL PLAN

Regulatory Reference: 30 CFR 784.26, 817.95; R645-301-244, 301-420.

#### Analysis:

The facility will include a 2,600 ton surge stockpile, a screening/crusher building, and a 10,000 ton processed coal stockpile along with associated conveyors. The facility will handle a capacity of approximately 2,000,000 tons of coal per year (page 17b, Chapter II).

Appendix X.C-2 contains the "Notice of Intent of Modify Approval Order DAQE-117-95' Modification for 4 East Portal," submitted April 2002. Appendix A of the Notice of Intent contains the Department of Environmental Quality, Division of Air Quality Approval Order number DAQE-177-95, dated March 2, 1995.

The Notice of Intent (NOI) indicates that the Emery Mine is relocating the coal processing operations to the 4<sup>th</sup> East Portal. The NOI increases the handling capacity from 979,200 tons/yr to 1,300,000 tons/yr. The NOI application indicates under "General Information" that a permit to construct must be approved before any actual work is begun on the new facilities. The Permittee must include the Permit to Construct and revised Approval Order with the application.

The Notice of Intent indicates that Consol will conduct the Method 9 visible emission observations on the crusher, screen and transfer points within 180 days of initial start-up. The

## OPERATION PLAN

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Notice of Intent further indicates in Section 6.2 that "Consol will have access to a water truck to minimize fugitive dust emissions from the load-out facility, roadways, and any staging area associated with the coal processing facility. Water will be applied to surface areas if significant fugitive dust emissions are detected. Records of dust suppression application will be maintained."

The excavated material pile will cover 4.10 acres (see page VI.B.3-188a). The submittal should indicate measures other than application of water to be taken to establish wind erosion control on the excavated material pile.

### Findings:

The information provided does not meet the minimum requirements for Air Pollution Control Plan. The Permittee must submit the following, prior to approval, in accordance with:

**R645-301-420**, The revised Division of Air Quality Approval Order and "Permit to Construct" must be included with the application.

**R645-301-244.100**, The submittal should indicate measures to be taken to establish wind erosion control on the excavated material pile.

## TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR 817.22; R645-301-230.

### Analysis:

#### Removal and Storage

Topsoil will be protected in-place beneath the topsoil storage pile and the excavated material storage pile (5.35 acres total, according to page VI.B.3-188a). The submittal indicates that "this practice deviates from the normal topsoil handling practice." The Division invoked R645-301-232.710 and allowed this practice based on the following information:

1. The Excavated material storage pile lies above rock land, Montwel and Castle Valley soils (now correlated to the Hideout Series). These are shallow soils over sandstone bedrock. Average depth to bedrock is twelve inches (page 9 Appendix VII-3). A typical profile of the Hideout Series is described by the NRCS (page C-5, App VII-3) as "A -- 0 - 2 inches; C--2 to 20 inches; R -- 10 inches."
2. The soils will be covered with excavated overburden only, no refuse from roof and floor will be deposited with the excavated material;
3. Minimal rainfall will limit any leaching of minerals from excavated material to native surface soils.
4. Cryptogams considered critical to the reclamation of the site would be buried with the in-place soils. Crushing the cryptogams in place seems preferable to

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removing them entirely from the site, especially since lichen spores would stay in place ready to germinate upon re-exposure to light and moisture (Biological Soil Crusts: Ecology and Management. U.S.D.I. BLM Tech Ref 1730-2. 2001. Sec 4.3.4).

The topsoil remains underneath the excavated material stockpile, not within the excavation stockpile as reported on page 15 Chapter III. The native ground was to be left intact and demarcated with geotextile fabric or other method of visually delineating the topsoil. Field visits to the site on June 20, 2002 revealed procedures described on Page IV-7 of the submittal were not followed with regard to demarcating the in-place topsoil. Page IV-7 of the MRP must be updated with field modifications of demarcating the in-place topsoil.

The Permittee must ensure that excavated material placed on the topsoil does not fall into the category of underground development waste as defined by R645-100 (see deficiency written under R645-301-536). Storage of topsoil beneath the excavated material pile does not relieve the Permittee from the requirements to protect the topsoil from contaminants. To this end, the submittal describes analysis of the in-place topsoil, prior its use during reclamation (see discussion under Reclamation Plan Topsoil Subsoil).

Soil was removed from eight acres and stored as shown on as shown on Plate III-1. The storage pile lies on Persayo/Chipeta complex soils. The topsoil stockpile was expected to be 13,000 cubic yards according to the submittal, page II-17a. The submittal indicates on page VI.B.3-188a that the topsoil stockpile will cover 1.25 acres. Dimensions of the stockpile as shown on cross section E-E' of Plate IV-3b are 100' wide X 400' long X 16' high. The submittal indicates that the topsoil pile will be surveyed.

Seth McCourt, Mining Engineer, Emery Mine, recently surveyed the stockpile. A letter from Mr. McCourt to Priscilla Burton, dated July 9, 2002, confirms that the stockpile holds 12,958 cubic yards. Please update the submittal with the results of the survey including the dimensions of the topsoil pile.

Two pages of II-17a and II-17b were submitted: one with an April date and one with a May date. The Division reviewed the later date. Please remove from the final submittal the excess pages.

Protection of the stored topsoil is described on page IV-7. The submittal indicates that the topsoil pile will be seeded with the mix outlined in VII C. 3 of the MRP. There are two mixes listed on this page. The Permittee has communicated to the Division that the seed mix contained Russian Wild Rye, HighCrest Crested Wheatgrass, and Fourwing Saltbush, but the submittal must also clearly indicate which mix was used on the topsoil pile and which mix was used on the berms surrounding the pile. The submittal must also describe the length of time that passed between stockpiling and seeding and between seeding and any applications of water. The submittal should define the irrigation of the topsoil pile and berms (frequency and amount of water applied).

**Findings:**

The information provided does not meet the minimum requirements for Operations Topsoil Subsoil. The Permittee must submit the following, prior to approval, in accordance with:

**R645-301-121.100,** 1) The submittal must indicate that the topsoil is stored underneath the excavated material stockpile, not within the excavation stockpile as stated on page 15, Chapter III. 2) Two pages of 17a and 17b were submitted with different dates and figures on the pages. Please remove from the final submittal the excess pages. 3) Page IV-7 of the submittal must be updated with field modifications for in-place protection of topsoil that occurred on site during placement of the topsoil and excavated material. 4) The submittal must include an explanation on page IV-7 for deviating from the normal topsoil handling practice.

**R645-301-231.400,** 1) The submittal must indicate which seed mix was used on the topsoil pile and which mix was used on the berms surrounding the pile. The submittal must also describe the length of time that passed between stockpiling and seeding and between seeding and any applications of water. The submittal should define the irrigation of the topsoil pile and berms (frequency and amount of water applied). 2) The submittal should be updated with a drawing of the topsoil pile, indicating volumes surveyed in the pile (as per the MRP, page IV-8).

**VEGETATION**

Regulatory Reference: R645-301-330, -301-331, -301-332.

**Analysis:**

The topsoil pile at the 4<sup>th</sup> East Portal will be stabilized seeding and mulching (Chapter IV, page 7). This is a standard practice. However, Emery Deep has never stabilized any disturbance on the permit area using this method. An alternate method to stabilize the topsoil and other disturbed areas not in immediate use must be proposed.

**Findings:**

Information provided in the application and MRP is not considered adequate to meet the minimum Vegetation requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-331,** The application must describe a method to revegetate interim disturbances.

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## **ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES**

Regulatory Reference: 30 CFR 784.24, 817.150, 817.151; R645-301-521, -301-527, -301-534, -301-732.

### **Analysis:**

#### **Road Classification System**

The Permittee did not classify the roads that will be constructed within the 4<sup>th</sup> East Portal disturbed area.

#### **Plans and Drawings**

The Permittee needs to submit plans and drawings for the roads within the 4<sup>th</sup> East Portal disturbed area.

#### **Other Transportation Facilities**

The Permittee will build four conveyors at the 4<sup>th</sup> East Portal area. They are as follows:

- A 54-inch conveyor that transports coal from the mine site to the ROM stockpile.
- A 42-inch conveyor that takes coal from the ROM stockpile to the crusher building.
- A 42-inch conveyor that takes coal from the crusher to the coal stockpile
- A 42-inch conveyor that takes coal from the coal stockpile to the truck loadout.

### **Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-527**, The Permittee must classify each road that will be constructed within the 4<sup>th</sup> East Portal disturbed area, and include a detailed description of each road that contains the road gradient, road surface, road cut and fill embankments, culverts and ditches.

## **SPOIL AND WASTE MATERIALS**

Regulatory Reference: 30 CFR 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.



**Analysis:**

**Disposal of Noncoal Waste**

On page 10 of Chapter II, the Permittee describes how noncoal waste will be handled at the main mine facility. Temporary noncoal waste storage areas consist of two small pits dug into the side of the hill. The pits measure 20' by 40' by 10'. When the temporary storage facilities are full, the noncoal waste will be shipped to a private landfill.

The Permittee must state how noncoal waste at the 4<sup>th</sup> East Portal area will be handled.

**Coal Mine Waste**

The existing plan call for coal mine waste, underground development waste to be place in a refuse pile that is located on the hilltop adjacent to the northwest coal stockpile at the main mine facility. The underground development waste will consist mostly of material encountered from roof fall and development of underground workings.

The Permittee needs to state how coal mine waste will be handled at the 4<sup>th</sup> East Portal area. Since the site is located away from the refuse pile, the most likely scenario is that coal mine waste will be temporarily stored on site until a truck load has accumulated.

**Refuse Piles**

The proposal indicates on Chapter III page 12a that acid-toxic forming material (or refuse) will be disposed of in one of three locations:

1. the permanent underground development waste site; or
2. the abandoned underground mine workings; or
3. the coarse refuse disposal area.

A "proposed coarse refuse disposal area" is in the currently approved MRP and shown on Plate II-2. This coarse refuse disposal area is not located at the 4<sup>th</sup> East Portal breakout, but is located on the hilltop adjacent to the northwest coal stockpile at the main mine facility. However, Chap III page 9 indicates that this coarse refuse disposal area will not be constructed until the Preparation Plant becomes a reality.

The Permittee must 1) provide an estimate of how much waste might be generated by the 4<sup>th</sup> East Portal operations and 2) determine how refuse generated at the 4<sup>th</sup> East Portal will be handled and 3) The submittal must specifically indicate that the excavated material pile will not be the disposal site for coal or underground development waste.

**Impounding Structures**

The Permittee does not plan to construct impoundments from coal mine waste.

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**Burning and Burned Waste Utilization**

The Permittee will follow the existing plan.

**Return of Coal Processing Waste to Abandoned Underground Workings**

The Permittee does not plan to return coal processing waste to abandoned underground workings.

**Excess Spoil**

During operations, there will be an excavated material storage pile that will hold approximately 132,000 cubic yards of material (page 71a, Chapter II) and cover 4.1 acres (Chap VI.B.3). This material will come from:

- the development of the airshaft (70 feet deep and 16' in diameter) in the southwest corner of the site (page 17c Chapter II);
- the ramp excavation down to the portal cuts and across the face of the three portals each 8 x 14 on 45 foot centers;
- the temporary diversion construction;
- construction of the surge stockpile and coal handling facility (cross section B-B' Plate IV-3);
- the sediment pond (IV-8).

The submittal must also state that the excavated material storage pile will not contain underground development waste as defined by R645-100. The Division imposes this requirement on the Permittee due to the fact that:

1. There is a permitted disposal site for refuse within the permit area and
2. Topsoil being stored beneath the excavated material must be protected from contaminants.

Reclamation of the 4<sup>th</sup> East portal will require approximately 99,000 cubic yards as indicated on page IV-14 of the submittal. That leaves 33,000 cubic yards of excess spoil during reclamation to be graded over the surface.

**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-528.320**, The Permittee must state how they will handle coal mine waste at the 4<sup>th</sup> East Portal area. For example, the Permittee must state if coal mine waste will be temporarily stored before taken to a disposal site.

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**R645-301-536,** 1) The Permit Application must provide an estimate of the amount of coal mine waste to be generated by mining at the 4<sup>th</sup> East Portal. 2) The submittal must state that the excavated material storage pile will not be the repository for underground development waste as defined by R645-100. 3) The submittal must state how the refuse generated by the 4<sup>th</sup> East Portal development and by operations will be handled (see similar deficiency under R645-301-528.320).

## HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

### Analysis:

#### General

The 4<sup>th</sup> East Portal surface area is located in the southwestern end of Castle Valley. The site sits on the surface of exposed Ferron Sandstone a member of the Mancos Shale. There is very little cover of soil material at the site. A stream channel cuts through the proposed surface facilities. The channel is carved in bedrock of the Ferron Sandstone. The channel is a small tributary to Christiansen Wash, a tributary to Quitchupah Creek. The length of the channel above the portal area is over two miles, Plate VI-12. It will be diverted around the disturbed area via a temporary channel excavated by the Permittee.

The channel is considered ephemeral even though it has not been monitored to characterize the flow. The soils consist of fine powdery sand, eroded from the Ferron Sandstone. There is no riparian vegetation in the proposed disturbed area. There is no vegetation in the channel. The site is characterized by sparse stands of juniper trees, small desert shrub and grasses. In some areas the soil is crusted with cryptogams. There is a vegetated channel area below the proposed disturbed area that is being evaluated for wetland status. The site was previously proposed for the sedimentation pond site, however wetland status is still pending so the Permittee decided to use other sediment control structures as described in previous review sections. The channel will not be disturbed.

With the construction of the 4<sup>th</sup> East Portal area, the potential for physical surface impacts expands. The Permittee has previously described the probable impacts for the mine operation in the MRP p. 171, Chapter VII of 2. Essentially, the mine is changing from an inactive status to an active status. Data gathered over the years of inactive status should be summarized and compared to the PHC to check if conditions have changed. If it is found that the PHC needs modification to describe future impacts, the Permittee should do so.

#### Ground-Water Monitoring

No ground water monitoring will be conducted at the 4<sup>th</sup> East Portal site. No mine water will be discharged from this site. Groundwater accumulates in the mine where it is already being

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monitored via wells and as a discharge site at UPDES discharge sites 001 and 006.

**Surface-Water Monitoring**

The Permittee has not mentioned monitoring of the retention basins or sedimentation pond. Since these ponds have a dewatering pipe as shown in Plate IV-10a, the Permittee needs to describe how the water quality will be evaluated before discharge.

**Acid- and Toxic-Forming Materials**

Drill Hole FC 702 provides an analysis above and below the I & J coal seams in the 4th East Portal location (page IV-2 through IV-6). This core indicates that the highest Electrical Conductivity and Sodium Adsorption Ratios are in the top ten feet of this material. Selenium and Boron are not a problem in the depths to be excavated. A layer of black sooty coal is encountered at approximately 34 feet. The band is about 6 inches thick and is low in pH (5.2) and has elevated copper (4.0 ppm) and iron content (821 ppm). This coal layer must be hauled to the refuse disposal site (see deficiency R645-301-536).

**Transfer of Wells**

There are no wells within the 4<sup>th</sup> East Portal area.

**Discharges into an Underground Mine**

The Permittee describes in Ch. 2, Page 4, how they plan to build a ramp from the surface to the coal seam 50 feet below. The combined area of the ramp, ROM stockpile, and conveyer total an area of 2.3 acres. Precipitation falling on this area will drain into the mine. The Permittee has not accounted for the amount of runoff entering the mine during a 10 yr- 24 hr precipitation event. The runoff entering the mine will not drain to the sedimentation pond or retention basins.

**Gravity Discharges**

There will be no gravity discharges from the 4<sup>th</sup> East Portal site.

**Water Quality Standards and Effluent Limitations**

The Permittee states that monitoring will not be conducted at the 4<sup>th</sup> East Portal site. Although there are no surface or groundwater resources at the site the retention and sedimentation ponds have decant pipes and should have a UPDES permit and be monitored conducted when the ponds are drained. The Permittee indicates p. 156 that Sedimentation Pond #9 will function as a UPDES monitoring site and will be monitored for the parameters on p. 157, Chapter VI.A.6.

### **Diversions**

The Permittee plans to use berms to divert undisturbed drainage away from the site and disturbed drainage to retention basins and sedimentation ponds. The plan views and cross-sections of the berms are shown on Plate IV-3, IV-3b and IV-10a.

An undisturbed diversion ditch is planned to divert runoff from a 310.4 acre drainage basin around the disturbed area. The diversion is temporary and designed to handle the runoff from a 10 yr- 24 hr precipitation event plus a 1 foot freeboard. The diversion will be excavated in solid sandstone and divert ephemeral runoff flows from the channel to an adjacent channel. The Permittee has supplied flow and channel design calculations for the undisturbed drainage in the updated submittal. Calculations are based on a SCS Type II storm. Peak flow is calculated to be 50.66 cfs. The temporary diversion is designed using Mannings equation for channel flow. Calculations show the ditch to be designed to transmit 66.11 cfs with a 6 foot wide bottom, 2H:1V sideslopes, 4% gradient in solid rock. The Permittee also ran a SedCad 4 using the same channel shape and received a discharge value of 71.3 cfs.

The Permittee shows a culvert on Plate IV-10a that conveys water under the entrance road. From the maps it is unclear whether the culvert transmits disturbed runoff or undisturbed runoff. From Plate IV-3 it looks like the culvert transmits undisturbed drainage to Sediment Pond #9. The Permittee should make this clear.

### **Stream Buffer Zones**

There is no mining within 100 feet of a perennial stream channel at the 4<sup>th</sup> East Portal site.

### **Sediment Control Measures**

All precipitation falling on the 4<sup>th</sup> East portal site will flow into the mine, be channeled into retention ponds, directed into Sedimentation Pond #9 or be treated by a silt fence. A combination berms and culverts are proposed to control overland flow on the disturbed area. Plate IV-3 shows an 18 inch culvert at the entrance of the site and a 12 inch culvert below Retention Pond #1.

### **Siltation Structures**

The Permittee describes the method of installation, but does not describe the placement of silt fences to the 4th East Portal area. Silt fences are required on the west and north sides of the disturbed portal area to trap and contain sediment that doesn't report to the sedimentation pond or retention ponds.

### **Sedimentation Ponds**

Plate IV-3 shows the area for Sedimentation Pond #9 watershed. Two retention ponds

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will be constructed, one will contain runoff from the Topsoil Stockpile and another to contain runoff from the excavated material stockpile. The retention ponds are designed to treat the runoff from a 10 yr-24 hr precipitation event.

**Discharge Structures**

The Permittee describes decant structures and emergency spillways to be designed on the retention basins and sedimentation pond.

**Casing and Sealing of Wells**

There are no wells on the 4<sup>th</sup> East Portal area to seal.

**Findings:**

Information provided in the application is not considered adequate to meet the minimum Hydrologic Resource section requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-731**, The Permittee shall provide silt fence installation drawings and identify the location and placement of silt fences on a map. Silt fence is required around the boundary of the west and north sides of the 4<sup>th</sup> East portal area.

**R645-301-731.221**, The Permittee must provide a monitoring plan for the retention ponds. The plans must show that the retention pond will have decant pipes and be monitored according to the UPDES permit.

**R645-301-731.510**, The Permittee shall identify the amount of surface runoff draining into the mine from the surface and any potential for contamination or impacts to underground water.

**R645-301-142**, The Permittee is required to update the PHC to identify changes in probable hydrologic consequences as a result of inactivity and any potential impacts from future mining.

**SUPPORT FACILITIES AND UTILITY INSTALLATIONS**

Regulatory Reference: 30 CFR 784.30, 817.180, 817.181; R645-301-526.

**Analysis:**

In Chapter II, the Permittee listed the following support facilities:

- 4<sup>th</sup> East Mine Access Portals
- Topsoil Stockpile
- Excavation Material Stockpile
- Sediment Pond #9
- Coal Handling Facilities and Stockpiles which include a 54" conveyor from the mine to the 2,600 ton surge stockpile and reclaim feeder/loader, a 42" conveyor belt to the screening and crushing plant, a 42" conveyor to the coal stockpile and reclaim feeder/loader facility and a 42' conveyor for loading trucks.
- Stream Diversions, unaffected drainage
- Storage Area
- Airshaft
- Rock Dust Bin

However, the facilities listed in Chapter II are not consistent with the information listed in other sections of the PAP. For example, the surface facilities maps show the following structures not listed in Chapter II:

- Retention Pond #2
- Retention Pond #3
- Water Tank 20' diameter
- Airshaft Fan
- Culverts

In addition, the bond cost calculations show items that may be associated with the 4<sup>th</sup> East Portal area but were not listed in either the facilities list or shown on the surface facilities maps. Those structures include:

- Surface Storage Tank Containment Area
- Stocker Oil Heater Enclosure
- NPDES Outfalls
- Storage Trailers
- Fences

**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

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**R645-301-528**, The Permittee must list all support facilities and utility installations in one section of the MRP. That list must show all structures that will be constructed in the 4<sup>th</sup> East Portal disturbed area.

## **SIGNS AND MARKERS**

Regulatory Reference: 30 CFR 817.11; R645-301-521.

### **Analysis:**

The Permittee is required to place signs and markers as outlined below:

- Signs and markers shall: be posted, maintained, and removed by the person who conducts the underground mining activities; be of a uniform design throughout the activities that can be easily seen and read; be made of durable material; and, conform to local laws and regulations. Signs and markers shall be maintained during all activities to which they pertain.
- Mine and permit identification signs shall be displayed at each point of access from public roads to areas of surface operations and facilities on permit areas for underground mining activities. Signs will show the name, business address, and telephone number of the person who conducts underground mining activities and the identification number of the current regulatory program permit authorizing underground mining activities. Signs shall be retained and maintained until after the release of all bonds for the permit area.
- Perimeter markers shall clearly mark the perimeter of all areas affected by surface operations or facilities before beginning mining activities.
- Buffer zones shall be clearly marked to prevent disturbance by surface operations and facilities.
- Topsoil markers shall be used where topsoil or other vegetation-supporting material is segregated and stockpiled.

In Section UMC 817.11 of the MRP the Permittee commits to place signs and markers as outlined above.

### **Findings:**

The Permittee has met the minimum requirements of signs and markers section of the regulations.



## USE OF EXPLOSIVES

Regulatory Reference: 30 CFR 817.61, 817.62, 817.64, 817.66, 817.67, 817.68; R645-301-524.

### Analysis:

#### General

The Permittee did not include a blasting plan in the PAP for the 4<sup>th</sup> East Portal area. The general blasting plan in the MRP state the following:

Mining and reclamation activities at the Emery Mine may require the use of blasting or explosives on the surface during construction of surface facilities or new portals. Consol will comply with all local, State and Federal laws in the use of explosives during construction of the site and at any other time when blasting is required at the Emery Mine. Prior to any surface blasting, Consol will obtain approval of the blasting plan from the Division. A copy of a blasting plan using more than five pounds of explosives is included in Appendix IV-9.

Appendix IV-9 was incorporated into the MRP on May 7, 2002. The amendment deals specifically with blasting used to open up the 4<sup>th</sup> East Portal area. The approved plan is good between April 15, 2002 and October 1, 2002.

### Findings:

The Permittee has met the minimum requirements of the explosives section of the regulations.

## MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

### Analysis:

#### Mining Facilities Maps

The Permittee did not give the Division a surface facilities map for the 4<sup>th</sup> East Portal disturbed area. Such a map would show all the surface facilities for the area. Most of the information is shown on maps but there is no one signal surface facilities map. The Division needs an accurate surface facilities map to conduct inspections.

#### Monitoring and Sample Location Maps

The Permittee has identified dewater pipes on Plate IV-3 where discharge samples will be required when discharge occurs.

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**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-521.160,** The Permittee must give the Division a map that shows all of the surface facilities for the 4<sup>th</sup> East Portal area. This map is needed so that the Division's inspector can check surface facilities against one map. The Permittee can contact the inspector for additional information about the surface facilities map.

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### GENERAL REQUIREMENTS

Regulatory Reference: PL 95-87 Sec. 515 and 516; 30 CFR 784.13, 784.14, 784.15, 784.16, 784.17, 784.18, 784.19, 784.20, 784.21, 784.22, 784.23, 784.24, 784.25, 784.26; R645-301-231, -301-233, -301-322, -301-323, -301-331, -301-333, -301-341, -301-342, -301-411, -301-412, -301-422, -301-512, -301-513, -301-521, -301-522, -301-525, -301-526, -301-527, -301-528, -301-529, -301-531, -301-533, -301-534, -301-536, -301-537, -301-542, -301-623, -301-624, -301-625, -301-626, -301-631, -301-632, -301-731, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-732, -301-733, -301-746, -301-764, -301-830.

#### Analysis:

The demonstration test plot was constructed in 1984 and reworked in 1987 in an effort to determine successful revegetation techniques for use on subsoils derived from the Mancos Shale. The chemical characteristics of the soils in this plot are described with the Vegetation Data in the 1991 Annual Report. They are extremely sodic, with average values in the top six inches of 9.3 pH and 19.8 SAR. The variables tested in the plots were:

- topsoil and no topsoil treatments;
- irrigation and no irrigation treatments;
- mulch and no mulch treatments;
- furrows and no furrows; and
- mature versus containerized transplants.

The demonstration test plots were evaluated in 1989 and 1990 by Richard Denning and David Larson of Consolidation Coal Company. The results of the evaluation are included in the Annual Reports for 1988 and 1989. Mortality of transplants and containerized plants was high. At the end of the monitoring period, the 33% of the mature transplants survived and 10% of the containerized transplants were living. The most successful plots were those that received mulch and contained shallow depressions. Thus, the test plots emphasize that the most important variable is the availability of water. Water not only irrigates the plants, but also leaches the salts from the soil.

#### Findings:

The information provided in the application does not advance the Permittee's understanding of reclamation procedures for the Emery Mine and is therefore inadequate. A deficiency concerning reclamation has been written by another reviewer under Reclamation Plan, Revegetation, R645-301-340.

## APPROXIMATE ORIGINAL CONTOUR RESTORATION

Regulatory Reference: 30 CFR 784.15, 785.16, 817.102, 817.107, 817.133; R645-301-234, -301-412, -301-413, -301-512, -301-531, -301-533, -301-553, -301-536, -301-542, -301-731, -301-732, -301-733, -301-764.

### Analysis:

The definitions of AOC contained in the Surface Mining Control and Reclamation Act (SMCRA) and the Utah coal rules are primarily statements of the objectives of post-mining backfilling and grading so that the area "closely resembles the general surface configuration of the land prior to mining" and "blends into and complements the drainage pattern of the surrounding terrain". At the same time, reclamation performance standards must be met, including controlling erosion, establishing mass stability and establishing permanent, diverse and effective vegetative cover. In some circumstances, replicating the original contour may only be possible at the expense of one or more reclamation performance standards. In other circumstances, it may be possible to achieve nearly exact original contour and simultaneously satisfy all the other regulatory requirements. Although the principles of regulatory construction suggest that specific regulatory requirements take precedence over general provisions, this directive is intended to reconcile the specific performance standard requirements of the regulatory program with the general definitions of AOC in a way that accomplishes the objectives of SMCRA.

The underlying objectives of the AOC requirements relate to the assumption that post-mining features which mimic pre-mining features are most likely to quickly achieve mass and erosional stability, revegetation, hydrologic balance and productive post-mining land use, all of which are the objectives of the reclamation performance standards. AOC also addresses aesthetic considerations. In order to evaluate methods for achieving AOC, the underlying objectives and challenges of reclamation at the site in question must first be identified.

### *Final Surface Configuration*

The main question that is used to determine if the site meets this requirement is "Does the postmining topography, excluding elevation, closely resemble its premining configuration?" The Division relies on the judgment of the technical staff that reviews the reclamation plan. The staff reviewed the premining and post mining topographic maps and cross sections and determined that this condition is met based on the following:

- The premining and postmining topography are shown on Plate III-5. The main differences between the premining and postmining topography is that the postmining contours are smoother. However, pocking and other surface roughening techniques tend to make the postmining surface look more natural after a few years.
- The premining and postmining cross-sections shown on Plate IV-3, IV-3a and IV-3b

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shows those premining and postmining contours will be similar. The highwalls will be located in the lower section of the ramp area and will be eliminated.

*All Spoil Piles to be eliminated*

No spoil piles are associated with this site.

*All Highwalls to be eliminated*

The highwalls will be located at the bottom of the ramp. The ramp will be completely backfilled during final reclamation.

Because the highwalls areas will be restored to approximate premining topography the Division finds that the highwall elimination plans meets the minimum requirements of R645-301-553.120.

*Hydrology*

The main concerns with hydrology are that the drainages are restored, sediment is controlled and that no hazardous or toxic discharges will occur. The Division considers that those conditions will be met when the hydrologic reclamation requirements are met.

*Post-Mining Land Use:*

The Division has found that the application meets the general post-mining land use requirements

*Variance from AOC:*

The Permittee did not request a variance from AOC.

*General Backfilling and Grading:*

The Division analysis of the general backfilling and grading requirements is in the backfilling and grading section of this TA. The Division has found the general backfilling and grading requirements are satisfied.

The Permittee did state in Chapter III page 11 that all areas will be graded to the approximate pre-disturbed contours with the exception of the 4<sup>th</sup> East Portal boxcut. The Division is not sure what the Permittee means by stating that the boxcut area contours will not be restored to the approximate original contour.

**Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-121.200**, The Permittee must state why the boxcut area in the 4<sup>th</sup> East Portal facilities will not be reclaimed to the pre-disturbed area and what the postmining topography will be like.

**BACKFILLING AND GRADING**

Regulatory Reference: 30 CFR 785.15, 817.102, 817.107; R645-301-234, -301-537, -301-552, -301-553, -302-230, -302-231, -302-232, -302-233.

**Analysis:**

**General**

The general backfilling and grading requirements are as follows:

*Achieve AOC:*

The AOC issues are discussed in the AOC section of this TA. The Division made the finding that the reclamation plan is adequate to insure that the site can be reclaimed to the approximate original contour requirements.

The Permittee needs to provide the Division with a table that shows the cuts and fills that will occur during final reclamation. The Division is concerned that due to swelling the Permittee will be unable to dispose of all the cut material from the portal ramp and air shaft back into those structures.

*Elimination of Highwalls Spoil Piles and Depressions:*

Highwall elimination is discussed in the AOC section of this TA. The highwall are located at the bottom of the ramp. The ramp will be completely backfilled and graded so the highwalls will be eliminated. See Plate IV-3 for cross-section of the premining and postmining ramp and Plate III-5 for premining and postmining contours.

No spoil piles will be associated with the site. No major depressions will be present after reclamation. Minor depressions (pocks) may be left after topsoil placement to stabilize the surface and retain moisture. The pocks generally fill in within a few years.

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*Slope Stability:*

The Permittee did not address slope stability for the 4<sup>th</sup> East Portal area.

*Minimize Erosion and Water Pollution:*

The review of the erosion and water pollution plans is in the hydrology section of the TA.

*Post-Mining Land Use:*

The post mining land-use finding is in the post-mining land use section of the TA.

*Settled and Revegetated Fills:*

The variances from AOC and other requirements for existing spoil or underground development waste do not apply to the 4<sup>th</sup> East Portal area.

*Spoil Disposal:*

No spoil will be generated on site.

*Disposal of Coal Mine Waste and Underground Development Waste:*

The Permittee must address how coal mine waste and underground development waste will be handled at the 4<sup>th</sup> East Portal area.

Exposed Coal Seams and Acid- and Toxic-Forming Materials and Combustible Materials:

The coal will be exposed at the airshaft and the portals. Those areas will be backfilled with more than 4 feet of cover.

*Cut and Fill Terraces:*

The Permittee does not propose to use cut and fill terraces at the 4<sup>th</sup> East Portal area.

*Final Preparation of Graded Surfaces:*

The proper preparation of the graded surface is a performance standard that the Permittee must meet during reclamation.

Page 11, Chapter 2 indicates that the 4<sup>th</sup> East Portal will not be regarded to original contour. The Division understands that there will be slight mounding (1.5 to 2.5 feet) over the area of the box cut due to a 10-15% swell during the process of end dumping over the edge to fill



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the 70 feet deep box cut (page 15, Chapter III). The application further indicates that this will provide the required compaction for the fill. The two ideas seem to be opposing. In addition the Division does not agree with compaction by free fall.

Berms will contain material to be used as fill.

Six inches of topsoil will be applied to the regarded stream channel to bring the channel to approximate original contour.

### **Previously Mined Areas**

No previous mining has occurred at the surface of the 4<sup>th</sup> East Portal areas.

### **Steep Slopes**

No steep slopes exist at the 4<sup>th</sup> East Portal area.

### **Special Provisions for Steep Slope Mining**

The Permittee did not request and special provisions for steep slope mining.

### **Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-542.200**, The Permittee must give the Division a detailed cut and fill chart for the reclamation of the 4<sup>th</sup> East Portal area. The Division is concerned that there may be excess material from excavated material stockpile due to swelling.

**R645-301-553.130**, The Permittee must show that the reclaimed slopes will have a static safety factor of 1.3 or greater.

**R645-301-553**, The method of compaction of the excavated material into the box cut must be described. Compaction by free fall is not acceptable.

## **MINE OPENINGS**

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### Analysis:

The Permittee states their portal closure plan in Section III C. 2 of the existing MRP. Under the existing portal closure plan the Permittee will either 1) backfill a minimum of 25 feet or 3 times the portal height which ever is greater or 2) construct a block stopping and backfill 1 times the portal height.

The Division has modified the portal closure requirements. All portals are to be sealed by constructing an MSHA approved block sealing and backfilling a minimum of 25 feet. The Permittee needs to update their portal closure plan.

The shaft will be backfilled. The Division is concerned about settlement or movement of the fill material. The Permittee needs to state what will be done to protect against settlement of the fill material.

### Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-551**, The Permittee must commit to both constructing MSHA approved seals and backfilling a minimum of 25 feet for all portals. In addition, the Permittee must state how the backfill material in the shaft is to be placed to prevent movement that would result in settlement of the reclaimed surface.

## TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR 817.22; R645-301-240.

### Analysis:

#### Redistribution

In-place topsoil stored beneath the excavated material will be sampled and analyzed during final reclamation. And the soil will be loosened. The plan must describe what analyses will be conducted and for what purpose and what equipment will be used to loosen the compacted in place topsoil.

Stored topsoil will be replaced in a layer 6 inches deep over the site. The site will be seeded with the mixture described on page VIII.C.4. The Division calculates that 13,000 cu yds replaced over 8 acres will result in a foot of topsoil replacement.

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### Findings:

The information provided does not meet the minimum required for Reclamation Topsoil and Subsoil. The Permittee must submit the following, prior to approval, in accordance with:

**R645-301-240, -234.220,** The plan must explain the purpose and describe what analyses will be conducted on the in-place stored topsoil and what equipment will be used to loosen the compacted in place topsoil.

**R645-301-242.110,** The plan should calculate the replacement of topsoil to those areas where topsoil was removed, not the entire site.

## ROAD SYSTEMS AND OTHER TRANSPORTATION FACILITIES

Regulatory Reference: 30 CFR 701.5, 784.24, 817.150, 817.151; R645-100-200, -301-513, -301-521, -301-527, -301-534, -301-537, -301-732.

### Analysis:

#### Reclamation

The Permittee must state that roads in the disturbed area will be reclaimed and which ones will be retained.

### Findings:

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-542.600,** The Permittee must state how roads in the 4<sup>th</sup> East Portal area will be reclaimed.

## HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

## RECLAMATION PLAN

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### **Analysis:**

#### **General**

Reclamation of the 4<sup>th</sup> East Portal is described in Chapter III.C.2. When mining is complete the Permittee intends to remove the facility structures, then regrade the surface to approximate original contour. The Permittee marked the surface with flagging prior to developing the topsoil stock and rock waste piles. Upon reclamation the fill material will be removed to relocate the original contour of the channel and surrounding area.

The portals will be sealed and backfilled. The temporary undisturbed diversion channel will be backfilled and the surface flows directed to the original course. The Permittee has not provided details for backfilling to ensure compaction. The applicant will be required to compact the fill material in the ramp and ROM stockpile area to prevent percolation of surface waters into the underground mine entries. The Permittee should provide channel designs that prevent percolation of runoff into the ROM and ramp area. It may be necessary for the Permittee, to grout or apply a cement type of material to form a non-filtering layer below the surface to prevent infiltration of the channel flows.

#### **Surface-Water Monitoring**

The stream channels on and adjacent to the 4<sup>th</sup> East Portal are ephemeral. No monitoring is planned after reclamation.

Utah Coal Rules require the Permittee to show no additional settleable solids are degrading the stream channels below the reclaimed site prior to bond release.

#### **Transfer of Wells**

No wells exist in the 4<sup>th</sup> East Portal area to be reclaimed.

#### **Discharges into an Underground Mine**

Discharge into underground openings will be prevented, because plans have been mandated necessary for the Permittee, to grout or apply a cement type of material to form a non-filtering layer below the surface to prevent infiltration of the channel flows.

#### **Water Quality Standards and Effluent Limitations**

The Permittee will be required to maintain some of the sediment control devices to prevent offsite contamination.

## RECLAMATION PLAN

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### **Diversions**

The Permittee commits to reclaiming all diversions.

### **Sediment Control Measures**

The Permittee needs to commit to maintaining sediment control facilities through reclamation.

### **Sedimentation Ponds**

The Permittee does not provide a good discussion of the sequence when the sedimentation ponds will be removed. In Chapter III the Permittee Other treatment facilities

### **Ponds, Impoundments, Banks, Dams, and Embankments**

The Permittee has not address needs to submit a schedule of hydrologic structure removal in coordination with removal of mine structure removal, regrading and reseeding.

### **Findings:**

Information provided in the application is not considered adequate to meet the minimum Hydrologic Resource section requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-762.100**, The Permittee will submit detailed reclamation plans to identify backfilling and compaction of the ramp/ROM stockpile area, and designs to show how the stream channel will be rebuilt to ensure a stable channel with low leakage potential to prevent infiltration of runoff into the fill material of the ramp/ROM fill.

**R645-301-142**, The Permittee will submit a reclamation schedule identifying the timing of removing and reclaiming of the drainages, berms, culverts, retention ponds, sedimentation pond and silt fences in relation to mining structure removal, regrading and reseeding.

## **CONTEMPORANEOUS RECLAMATION**

Regulatory Reference: 30 CFR 785.18, 817.100; R645-301-352, -301-553, -302-280, -302-281, -302-282, -302-283, -302-284.

## RECLAMATION PLAN

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### Analysis:

#### General

The Borehole site and the Flume site were reclaimed in 1984. Mulching appears to have been one of the treatments. The last evaluation of the site is in the 1991 Annual report. The most frequently encountered species at the Flume site were *Atriplex canescens* (Four Wing Saltbush) and *Salsola kali* (Russian Thistle.)

According to the 1988 Annual Report, mat saltbush was transplanted to the Borehole site in 1987. The most recent monitoring of the Borehole site (1990) indicates that of the three of the twenty mat saltbush transplants survived. Species most frequently encountered at the Borehole site were *Bouteloua gracilis* (Blue Grama); *Atriplex* sp.; and *Halogeton glomeratus*.

The 1990 Annual report indicates that the Borehole Pump #3 and Sedimentation Pond #6 were built in the spring of 1989 and were seeded after construction without mulching. The initial seeding was unsuccessful. The areas were reseeded in October of 1991. As described in the 1991 Annual report, the following steps were taken in reseeding the topsoil piles and pipeline right of way:

- creation of depressions 4 – 5 feet square and six inches deep;
- discing the soil;
- seeding and mulching the soil by hand;
- then re-discing to crimp the 2 Tons/ac native hay mulch.

The reseeded topsoil piles were evaluated in November 1993 by Paul Baker, Reclamation Biologist for the Division:

*Best growth on all three piles is on the top where it is relatively flat. There is also a limited amount of growth in the gouges that were made on the sides of the slopes. Even though some plants appear to have become established, plant density is still low...Disturbance of the piles has led to growth of more halogeton and kochia than was present in 1991. The native grasses have not grown sufficiently that they can be identified...Shrubs that I found are winterfat, shadscale, and fourwing saltbush. Winterfat was by far the most prevalent of the shrubs. I did not see any seeded forbs...*

### Findings:

The information provided in the application does not advance the Permittee's understanding of reclamation procedures for the Emery Mine and is therefore inadequate. A deficiency concerning reclamation has been written by another reviewer under Reclamation Plan, Revegetation, R645-301-340.

## REVEGETATION

Regulatory Reference: 30 CFR 785.18, 817.111, 817.113, 817.114, 817.116; R645-301-244, -301-353, -301-354, -301-355, -301-356, -302-280, -302-281, -302-282, -302-283, -302-284.

### Analysis:

#### General Requirements

Vegetation reference areas were established and quantitatively sampled in 1980 by Stoecher-Keammerer & Associates of Boulder, Colorado. The mixed desert shrub reference area had a vegetative cover of 10.6 percent (Chpt. VIII, page 19). The raw data is not included in the Mining and Reclamation Plan (MRP). Eleven percent vegetative cover is low from the Division experience in observing vegetative cover on other adjacent sites. However, the reference area and 4<sup>th</sup> East Portal disturbed area compare equally based on the Division's visual observations. The vegetative cover of the reference area will be re-measured at the same time as the reclaimed disturbed area by the same observer. Variation from observer to observer is not critical if the observer is consistent from reclaimed area to reference area.

The MRP discusses standard revegetation methods to be used at final reclamation. In 20 years Emery Deep Mine has not stabilized any disturbance on the permit area with vegetation after disturbance. This has serious consequences since R645-301-133 requires that any permit application or application for permit change affirmatively demonstrate that reclamation as required by the State Program can be accomplished according to the information given in the permit.

The Emery Deep Mine is in a marginal precipitation zone for re-establishing vegetation from seed and perhaps by any other method. No additional disturbance can be allowed until a demonstration of reclaimability is made. Transplants, irrigation and/or amendments may be required to establish vegetation. Repeated and continuous efforts at the Hidden Valley Mine and Emery Deep Mine must be made to establish vegetation. The Permittee must propose a plan to re-establish the predisturbance plant community and restore the site to its premining land use.

### Findings:

Information provided in the application and MRP is not considered adequate to meet the minimum Revetation requirements of the regulations. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-340**, The application must describe methods to re-establish the predisturbance plant community and restore the site to its premining land use.

## RECLAMATION PLAN

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### STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR 817.95; R645-301-244.

#### Analysis:

The plan describes ripping the graded surface and applying seed and mulch to topsoiled areas. The plan should describe wind erosion control during plant establishment and attempts to re-establish cryptogams to the soil surface.

#### Findings:

The information provided is not adequate for the purposes of Reclamation Stabilization of Surface Areas. The Permittee must submit the following, prior to approval, in accordance with:

**R645-301-244**, The plan should describe wind erosion control during plant establishment and provide a method using the use of the best technology available to re-establish cryptogams to the soil surface.

### MAPS, PLANS, AND CROSS SECTIONS OF RECLAMATION OPERATIONS

Regulatory Reference: 30 CFR 784.23; R645-301-323, -301-512, -301-521, -301-542, -301-632, -301-731.

#### Analysis:

##### **Bonded Area Map**

Plate III-5 show the bonded area map for the 4<sup>th</sup> East Portal area.

##### **Reclamation Backfilling and Grading Maps**

Plate III-5 shows the reclaimed contours for the 4<sup>th</sup> East Portal area. Cross-sections for the area are shown on Plate III-3, Plate III-3a and Plate III-3b.

##### **Reclamation Facilities Maps**

Plate III-5 shows the location of the County road that will be left after final reclamation.



### **Final Surface Configuration Maps**

Plate III-5 shows the reclaimed contours for the 4<sup>th</sup> East Portal area. Cross-sections for the area are shown on Plate III-3, Plate III-3a and Plate III-3b.

#### **Findings:**

The Permittee has met the minimum requirements for the reclamation maps and cross-sections of the TA.

## **BONDING AND INSURANCE REQUIREMENTS**

Regulatory Reference: 30 CFR 800; R645-301-800, et seq.

#### **Analysis:**

##### **Determination of Bond Amount**

The Permittee needs to update the bond calculations for the entire mine site using the bonding method outline in OSM reclamation handbook. The Division will supply the Permittee with a copy of the OSM reclamation handbook and other bonding materials.

#### **Findings:**

The information provided in the proposed amendment is not considered adequate to meet the requirements of this section. Prior to approval, the Permittee must provide the following in accordance with:

**R645-301-830**, The Permittee must provide the Division with a detailed reclamation bond cost estimates in the form outlined in the *OSM Reclamation Handbook* for the entire Emery Deep mine. The bond calculations for the Emery Deep mine are not in a form that the Division can use to determine the adequacy of bonding. The Division will supply a copy of the handbook and other technical support as needed by the Permittee.